ECOLOGY

ALL FORMS OF LIFE IN RELATION TO ENVIRONMENT

OFFICIAL PUBLICATION OF THE
ECOLOGICAL SOCIETY OF AMERICA
CONTINUING THE PLANT WORLD

APR 1956
LIBRARY
POFI
FISH & WILDLIFE
SERVICE

VOLUME 31, 1950

1666

PUBLISHED QUARTERLY
AT
PRINCE AND LEMON STREETS, LANCASTER, PA.
BY THE
ECOLOGICAL SOCIETY OF AMERICA
AND THE
DUKE UNIVERSITY PRESS

ECOLOGY

A QUARTERLY JOURNAL
DEVOTED TO ALL PHASES OF ECOLOGICAL BIOLOGY
Established 1920

Editors: DONALD B. LAWRENCE (Botany), University of Minnesota.
EDWARD S. DEEVEY, JR. (Zoölogy), Yale University.

Business Manager: MISS EXIE DUNCAN, Duke University Press, Box 6697, College Station, Durham, N. C.

MEMBERS OF THE EDITORIAL BOARD:

1949–51

THOMAS BURNETT, Dominion Parasite Laboratory, Belleville, Ontario.
PIERRE DANSEREAU, Department of Botany, University of Michigan, Ann Arbor, Michigan.
RAYMOND DARLAND, University of Minnesota, Duluth Branch, Duluth 5, Minnesota.
FRANK A. PITELKA, Museum of Vertebrate Zoölogy, University of California, Berkeley 4, California.

1950–52

HERBERT C. HANSON, The Catholic University of America, Washington 17, D. C.
MARTIN JOHNSON, Scripps Institution of Oceanography, La Jolla, California.
KARL P. SCHMIDT, Chicago Natural History Museum, Chicago, Illinois.
L. H. TIFFANY, Northwestern University, Evanston, Illinois.

1951–53

JOHN T. CURTIS, Department of Botany, University of Wisconsin, Madison 6, Wisconsin.
REED W. FAUTIN, Department of Zoology, University of Wyoming, Laramie, Wyoming.
EUGENE P. ODUM, Department of Zoology, University of Georgia, Athens, Georgia.
B. W. WELLS, Department of Botany, North Carolina State College, Raleigh, North Carolina.
Ex officio members: H. J. OOSTING, Duke University, Durham, North Carolina, and W. J. HAMILTON, JR., Cornell University, Ithaca, N. Y. (the editors of ECOLOGICAL MONOGRAPHS).

The Ecological Society of America

OFFICERS FOR 1951

President, S. CHARLES KENDEIGH, University of Illinois, Vivarium Building, Wright and Healey Streets, Champaign, Illinois.

Vice-President, FRED W. ALBERTSON, Kansas State College, Hays, Kansas.

Secretary, MURRAY F. BUELL, Botany Department, Rutgers University, New Brunswick, New Jersey.

Treasurer, F. H. TEST, Department of Zoology, University of Michigan, Ann Arbor, Michigan.

LANCASTER PRESS, INC., LANCASTER, PA.

TABLE OF CONTENTS, VOLUME 31, 1950

ALDRICH, JOHN W. See STEWART, ROBERT E.

BAIR, THOMAS D. Experimental determination of the autoselected temperature in the chicken louse, *Cuclutogaster heterographus* (Nitzsch) . . 474–477

BILLINGS, W. D. Vegetation and plant growth as affected by chemically altered rocks in the western Great Basin 62–74

BOWEN, VAUGHAN T. See HUTCHINSON, G. EVELYN

BUELL, MURRAY F., AND JOHN E. CANTLON. A study of two communities of the New Jersey Pine Barrens and a comparison of methods 567–586

BUNT, FLOYD. See CAIN, STANLEY A.

BURLA, H., A. BRITO DA CUNHA, A. G. L. CAVALCANTI, TH. DOBZHANSKY, AND C. PAVAN. Population density and dispersal rates in Brazilian *Drosophila willistoni* 393–404

BURLA, H. See PAVAN, C.

BYRAM, GEORGE M., AND WARREN T. DOOLITTLE. A year of growth for a shortleaf pine 27–35

CAIN, STANLEY A., FERNANDO SEGADAS-VIANNA, AND FLOYD BUNT. Mollusks of Sodon Lake, Oakland County, Michigan. I. Stratigraphic occurrence of shells in peat and marl sediments 540–545
II. The winter occurrence of certain species 546–553

CANTLON, JOHN E. See BUELL, MURRAY F.

CAVALCANTI, A. G. L. See BURLA, H.

CHIANG, H. C., AND A. C. HODSON. The relation of copulation to fecundity and population growth in *Drosophila melanogaster* 255–259

CHU, KWEI-LING, AND WILLIAM S. COOPER. An ecological reconnaissance in the native home of *Metasequoia glyptostroboides* 260–278

COOPER, WILLIAM S. See CHU, KWEI-LING

CURTIS, J. T., AND R. P. MCINTOSH. The interrelations of certain analytic and synthetic phytosociological characters 434–455

CURTIS, JOHN T., AND MAX L. PARTCH. Some factors affecting flower production in *Andropogon gerardi* 488–489

DA CUNHA, A. BRITO. See BURLA, H.

DAVIS, CHARLES C., AND ROBERT H. WILLIAMS. Brackish water plankton of mangrove areas in southern Florida 519–531

DAVIS, CHARLES C. See SMITH, F. G. WALTON

DEEVEY, EDWARD S., JR. Hydroids from Louisiana and Texas, with remarks on the Pleistocene biogeography of the western Gulf of Mexico 334–367

DEXTER, RALPH W. Restoration of the *Zostera* faciation at Cape Ann, Massachusetts 286–288

DOBZHANSKY, TH. See BURLA, H.; PAVAN, C.

DOOLITTLE, WARREN T. See BYRAM, GEORGE M.

ELLISON, LINCOLN. See LULL, HOWARD W.

EVANS, FRANCIS C. Relative abundance of species and the pyramid of numbers 631–632

FOSBERG, F. R. Ecological notes on the upper Amazon 650–653
Remarks on the factual basis of ecology 653–654
FOX, DENIS L. Comparative metabolism of organic detritus by inshore animals 100–108
GARDNER, J. L. Effects of thirty years of protection from grazing in desert grassland 44–50
GATES, FRANK C. The disappearing Sleeping Bear Dune 386–392
GORDON, WILLIAM E. Can traditional ecology embrace human ecology? A letter to the editors 489–491
GRIMM, WILLIAM C. See RICHMOND, NEIL D.
HAAS, FRITZ. Hermit crabs in fossil snail shells in Bermuda 152
HANSON, HERBERT C. Vegetation and soil profiles in some solifluction and mound areas in Alaska 606–630
HARPER, ROLAND M. Algae on animals: a bibliographic note 303–304
HODSON, A. C. See CHIANG, H. C.
HOLT, J. See STONE, E. C.
HOPKINS, JOHN S. Differential flotation and deposition of coniferous and deciduous tree pollen 633–641
HUTCHINSON, G. EVELYN, AND VAUGHAN T. BOWEN. Limnological studies in Connecticut. IX. A quantitative radiochemical study of the phosphorus cycle in Linsley Pond 194–203
JEHN, KENNETH H. The plant and animal environment: a frontier 657–658
KELTING, R. W. See PENFOUND, WM. T.
KONIS, E. The effect of leaf temperature on transpiration 147–148
LEOPOLD, A. STARKER. Vegetation zones of Mexico 507–518
LOOSANOFF, VICTOR L., AND PHYLLIS B. SMITH. Apparatus for imitating changes in salinity of water occurring in nature during a complete tidal cycle 472–473
Apparatus for maintaining several streams of water of different constant salinities 473–474
LULL, HOWARD W., AND LINCOLN ELLISON. Precipitation in relation to altitude in central Utah 479–484
See Erratum 665
MARKS, JOHN BRADY. Vegetation and soil relations in the Lower Colorado desert 176–193
MATTOX, N. T., AND J. T. VELARDO. Effect of temperature on the development of the eggs of a conchostracan phyllopod, *Caenestheriella gynecia* 497–506
MCINTOSH, R. P. See CURTIS, J. T.
MIRANDA, F., AND A. J. SHARP. Characteristics of the vegetation in certain temperate regions of eastern Mexico 313–333
MOORE, WALTER G. Limnological studies of Louisiana lakes. I. Lake Providence 86–99
A new locality record for *Branchinecta coloradensis*, with habitat notes on two species of fairy shrimp in central Texas 655–657
NASH, CARROLL BLUE. Associations between fish species in tributaries and shore waters of western Lake Erie 561–566

NEWCOMBE, CURTIS L. A quantitative study of attachment materials in Sodon Lake, Michigan 204–215
NORRIS, FRED H. See SHANKS, ROYAL E.
ODUM, EUGENE P. Bird populations of the Highlands (North Carolina) Plateau in relation to plant succession and avian invasion 587–605
PARTCH, MAX L. See CURTIS, JOHN T.
PAVAN, C., TH. DOBZHANSKY, AND H. BURLA. Diurnal behavior of some neotropical species of *Drosophila* 36–43
PAVAN, C. See BURLA, H.
PEARSE, A. S. Notes on the inhabitants of certain sponges at Bimini .. 149–151
PENFOUND, WM. T., AND R. W. KELTING. Some effects of winter burning on a moderately grazed pasture 554–560
PENNAK, ROBERT W. Paris ecology colloquium 478
PLATT, ROBERT B., AND C. S. SHOUP. The use of a thermistor in a study of summer temperature conditions of Mountain Lake, Virginia 484–488
QUARTERMAN, ELSIE. Major plant communities of Tennessee Cedar Glades 234–254
RAZI, BASHEER AHMED. A contribution towards the study of the dispersal mechanisms in flowering plants of Mysore (South India) 282–286
REDDY, D. BAP. Influence of the interaction of environmental factors upon the immature stages of the rice weevil 641–642
REYNOLDS, HUDSON G. Relation of Merriam kangaroo rats to range vegetation in southern Arizona 456–463
RICHMOND, NEIL D., AND WILLIAM C. GRIMM. Ecology and distribution of the shrew *Sorex dispar* in Pennsylvania 279–282
RICKER, WILLIAM E. Cycle dominance among the Fraser sockeye 6–26
SABROSKY, CURTIS W. Taxonomy and ecology 151–152
SCHMIDT-NIELSEN, BODIL, AND KNUT SCHMIDT-NIELSEN. Evaporative water loss in desert rodents in their natural habitat 75–85
SEGADAS-VIANNA, FERNANDO. See CAIN, STANLEY A.
SHANKS, ROYAL E., AND FRED H. NORRIS. Microclimatic variation in a small valley in eastern Tennessee 532–539
SHARP, A. J. See MIRANDA, F.
SHELFORD, V. E. Fencing natural areas 288–290
SHOTWELL, J. ARNOLD. Distribution of volume and relative linear measurement changes in *Acmaea*, the limpet 51–61
The vertical zonation of *Acmaea*, the limpet 647–649
SHOUP, C. S. See PLATT, ROBERT B.
SKUTCH, ALEXANDER F. Outline for an ecological life history of a bird, based upon the song tanager *Ramphocelus passerinii costaricensis* 464–469
SMITH, F. G. WALTON, ROBERT H. WILLIAMS, AND CHARLES C. DAVIS. An ecological survey of the subtropical inshore waters adjacent to Miami 119–146
SMITH, PHYLLIS B. See LOOSANOFF, VICTOR L.
SPENCER, JOHN L. The net phytoplankton of Quabbin Reservoir, Massachusetts, in relation to certain environmental factors 405–425
STARRETT, WILLIAM C. Food relationships of the minnows of the Des Moines River, Iowa 216–233

STAUBER, LESLIE A. The problem of physiological species with special reference to oysters and oyster drills 109–118
STEARNS, FOREST. The composition of a remnant of white pine forest in the Lake States 290–292
STEWART, ROBERT E., AND JOHN W. ALDRICH. A selected bibliography of ecological life history material on North American birds 469–471
STEYERMARK, JULIAN A. Flora of Guatemala 368–372
STONE, E. C., AND J. HOLT. A rapid method of separating seed of chamise (*Adenostoma fasciculatum*) from the duff 149
STRICKLAND, MARGARET. Differences in toleration of drying between species of termites (Reticulitermes) 373–385
TANNER, JAMES T. Edwin Booth Powers, 1880–1949 478–479
TIMMONS, F. L. Competitive relationships of four different lawn grasses with field bindweed and dandelion under frequent close clipping 1–5
TRESSELT, ERNEST F. The freshwater medusa, *Craspedacusta sowerbii*, in Matoaka Lake, Williamsburg, Virginia 478
UTIDA, SYUNRO. On the equilibrium state of the interacting population of an insect and its parasite 165–175
See Erratum 495
VELARDO, J. T. See MATTOX, N. T.
VISHER, STEPHEN S. Wet seasons in the United States: how wet and how frequent 292–303
WEBB, WILLIAM L. Biogeographic regions of Texas and Oklahoma 426–433
WILLIAMS, ROBERT H. See DAVIS, CHARLES C.; SMITH, F. G. WALTON
WOOD, R. D. Stability and zonation of Characeae 642–647
ZACH, LAWRENCE W. A northern climax, forest or muskeg? 304–306
Book Reviews, 153, 155, 157, 158, 159, 307, 312, 492, 493, 494, 659, 660, 662, 663, 665
Book Notices 161–164
Index to Volume 31 667
Errata 495, 665

MAILING DATES OF THE ISSUES OF VOLUME 31

Number 1: February 10, 1950 Number 3: August 7, 1950
Number 2: May 11, 1950 Number 4: November 17, 1950